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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

VORTMAN, ANATOLY

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,254

Applicant(s)

KAUTZ ET AL.

Examiner

Anatoly Vortman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11, 13-19, 21-27, 29 and 30 is/are rejected.
- 7) ☒ Claim(s) 6, 12, 20 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 9, 10, 15-19 and 23-26, are rejected under 35 U.S.C. 102(b) as being anticipated by US/5,659,285 to Takeda.

Regarding claims 1, 15-17, 23, and 24, Takeda disclosed (Fig. 1-8) a switching device (circuit breaker), comprising: an actuator element (8) including shape memory alloy (column 7, lines 18-22), into which an extended shape is impressed, the actuator element being connected to a movable contact part (6) of a switching contact (1b, 6) of the switching device; and means (10) for heating up the actuator element (8) above a temperature level bringing about opening of the switching contact (1b, 6) on the basis of a change in shape of the actuator element (Fig. 3), wherein the actuator element (8) is one which includes a curved shape in an operating state in which a switching function of the switching device is not triggered (Fig. 4), and is one which rests against a deflecting element (5) in a center of said deflecting element (5) with frictional engagement in such a way that the deflecting element (5) exerts, on a concave inner side of the actuator element (8), a counterforce partially counteracting the curve of the actuator element (8).

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Regarding claims 3, 4, 9, 10, 18, 19, 25, and 26, Takeda disclosed that the actuator element is part of a current path (between terminals (1) and (2)) and is heatable by an overcurrent (inherently) or indirectly (by resistor (10)) above the temperature level bringing about the opening of the switching contact (1b, 6).

Regarding claims 5, 11, and 27, Takeda disclosed a restoring spring (4) adapted to keep the actuator (8) in its curved shape.

Regarding claims 8, 22, and 30, Takeda disclosed that the actuator element (8) is strip shaped (Fig. 6).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 13, 14, 21, and 29, are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda in view of US/5,061,914 to Busch et al., (Busch).

Regarding claims 7, 13, 14, 21, and 29, Takeda disclosed all of the claims limitations, but did not disclose that the shape memory element includes at least one of NiTi and CuAl alloy.

Busch disclosed shape memory actuators made of NiTi (nitinol) (column 7, lines 10+).

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Since inventions of Takeda and of Busch are from the same field of endeavor (shape memory actuators), the purpose of nitinol disclosed by Busch would be recognized in the invention of Takeda.

It would have been obvious to a person of ordinary skill in the thermal actuator art at the time the invention was made to use nitinol as taught by Busch for making said actuator of Takeda in order to provide said actuator of Takeda with good shape memory properties (Busch, column 1, lines 35+).

Alternatively, since nitinol have been notoriously known to a person of ordinary skill in the thermal actuator art at the time the invention was made as material with good shape memory properties, it would have been obvious to one having ordinary skill in the thermal actuator art to use nitinol for making said actuator of Takeda, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Allowable Subject Matter

5. Claims 6, 12, 20, and 28, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

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claims 6, 12, 20, and 28 recite “stranded wire” and “switching linkage”. The aforementioned limitations in combination with remaining limitations of the claims are believed to render the subject matter of the aforementioned claims patentable over the art of record.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

US/6480090, 5977858, 5844464, 5825275, 5760672, 5428336, 4551975, 4517541, 4510481, 4356478, 3846679, and JP/64-57546 disclosed switching devices with thermal actuators.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 703-308-7824. The examiner can normally be reached on 9:30-6:00, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg can be reached on 703-308-4815. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

A.V.
April 30, 2003

A handwritten signature in cursive script, appearing to read "A. Vortman", with a small checkmark or flourish at the end.

Anatoly Vortman
Primary Examiner
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